(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/114510 A2

(51) International Patent Classification[7]: H02P

(21) International Application Number: PCT/GB2004/002663

(22) International Filing Date: 21 June 2004 (21.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0314550.5 21 June 2003 (21.06.2003) GB

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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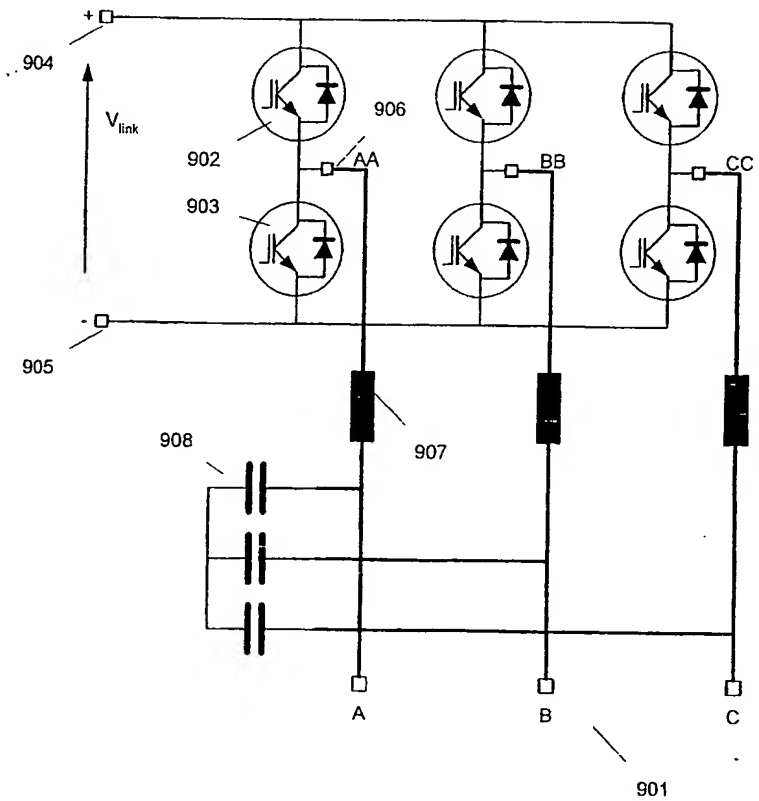
(54) Title: ELECTRIC SUBMERSIBLE PUMPS



(57) Abstract: An electric submersible pump contains an AC permanent magnet motor having three or more phases A, B, C and has a drive circuit for supplying varying drive signals to all the phases of the motor at the same time. Each drive signal is constituted by a cyclically smoothly varying voltage applied to the corresponding motor phase during driving of the motor. The circuit comprises switches (902, 903) for each motor phase, a control arrangement for turning the switches (902, 903) on and off at a frequency greater than the frequency of the cyclically smoothly varying voltages, and a filter (907, 908) for filtering the output voltages of the switches (902, 903) to produce the cyclically smoothly varying voltages. Such a drive circuit drives all the phases of the motor continuously such that damaging transients will not arise and without requiring the motor emf or drive signals to be sinusoidal.

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(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

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